06,01 - 8/18/2000-02551

Baker

Baker Environmental, Inc.
A Unit of Michael Baker Corporation

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August 18, 2000

Commanding General
ACS-EMD Building 58
PSC Box 20004
Marine Corps Base
Camp Lejeune, NC 28542-0004

Attn: Mr. Rick Raines
EMD IR Program

Re: Contract N62470-89-D-4814
Navy CLEAN, District III
Contract Task Order (CTO) 0312
Operable Unit No. 9 (Site 73)
Natural Attenuation Evaluation
MCB, Camp Lejeune, North Carolina

Dear Mr. Raines:

A Long-Term Monitoring (LTM) sampling event was recently completed at Camp Lejeune. During this event, the sampling team was asked to look into an anomalous finding in a monitoring well at Site 73 – Amphibious Vehicle Maintenance Facility. This letter serves to summarize our findings related to that well.

The well in question is 73-MW14 which is located in the central portion of the site approximately 200 feet southeast of Building A-47 (see attached figure). 73-MW14 was installed by Baker during the remedial investigation at Site 73. During the Natural Attenuation Evaluation (NAE) that was performed in 1999, the Baker site representative noted a "sheen" of free product in the well. This was considered noteworthy since no product was ever identified in the well prior to the NAE. While this is the case, brown/black staining and a strong petroleum odor was identified during drilling is evidenced by the boring log maintained by the Baker field geologist (a copy is attached for your review). During the recent LTM event, 73-MW14 was found to contain approximately 1.5 feet of free product (estimated thickness because an interface probe was not available to the sampling team). It should be noted that this site was formerly under the underground storage tank (UST) program to investigate several potentially leaking USTs associated with AS-47.

The detection of free product, and its apparently increasing thickness, in 73-MW14 represents a potentially serious condition at Site 73. Based on the presently available information, Baker takes the liberty to offer the following suggestions:

1. A vacuum truck should remove the free product and water from 73-MW14 before mid-September, 2000.

2. Baker will be on-site in September to redevelop wells at Site 73. At this time, 73-MW14 and nearby shallow wells (73-MW27, A47/308, 73-MW13 at a minimum) will be sounded with an interface probe to ascertain if new free product has entered 73-MW14 or occurs in surrounding wells. At that time, the integrity and security of the well installation will be visually inspected. As required, the wells will be rescued to the maximum possible extent.

3. The same steps will again be taken during the October LTM event.

Camp Lejeune will be kept informed by letter of the results of these well examinations.

Please do not hesitate to call me at (412) 269-2065 or Mr. Richard Bonelli (Baker's Activity Coordinator) at (412) 269-2033 if you have any questions or would like to discuss Baker's suggestions for addressing this situation.

Sincerely,

BAKER ENVIRONMENTAL, INC.

Thomas C. Fuller
Project Manager

TCF/lp

cc: Mr. Kirk Stevens – LANTDIV
Mr. Channing Blackwell - LANTDIV
Mr. Thomas Burton – Camp Lejeune

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TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: MCB Camp Lejeune, O. U. #9, Sites 65 and 73 Remedial Investigations
CTO NO.: 0312
COORDINATES: EAST: 2490155.77 NORTH: 310058.74
ELEVATION: SURFACE: 8.8
BORING NO.: 73-MW14
TOP OF PVC CASING: 8.48

RIG:	SPLIT SPOON	CASING	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)	2"		2¾"/6¼"		4-20-95	0-19	clear, mild (70's)	5.0'	
LENGTH	2'		5'						
TYPE	Std.		HSA						
HAMMER WT.	140#								
FALL	30"								
STICK UP									

REMARKS: Type II monitoring well set 4-20-95. HNu background range is .3ppm to 1.5 ppm

SAMPLE TYPE
S = Split Spoon, T = Shelby Tube, R = Air Rotary, D = Denison, N = No Sample
A = Auger, W = Wash, C = Core, P = Piston

Well Information	Diam.	Type	Top Depth (ft.)	Bottom Depth (ft.)
Riser pipe	2"	Schedule 40 PVC pipe	-.32	-3.0'
Well Screen	2"	Schedule 40 PVC pipe .01 slot	-3.0'	-18.0'

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	SPT or RQD	PID (ppm)	Visual Description	Well Installation Detail	Elevation (ft. MSL)
1-N 0-1 / 1 — 1.0	00	-	-	.4/.4	CONCRETE	Bentonite pellets	8.3 / 8.1
S1 1-3 / 2	S-1	1.7'/2.0	18 26 33	.3/.5	SAND, fine grained w/trace silt and wood fragments (3' to 5' only). Light brown to brown w/ black staining (petro odor), very dense, damp to moist	2" PVC riser pipe	7.3
3 — 3.0	01	85%	30				5.8
S2 3-5 / 4	S-2	1.5'/2.0	26 31	.5/.5		▽	
5 — 5.0		75%	30 27				3.8
A-N 5-7 / 6	AN	-	-	-	0-19 (SP)	Well screen	
7 — 7.0							1.8
S3 7-9 / 8	S-3	1.5'/2.0	10 11 12	.7/.7	SAND, fine grained w/trace silt. Gray and tan w/ dark brown/ black staining (petro odor), medium dense, wet	Sand pack	
9 — 9.0		75%	10				
S4 9-11 / 10	S-4	1.7'/2.0	3 6 10	.7/.8			
		85%	9		Match to Sheet 2		

DRILLING CO.: Parratt-Wolff
DRILLER: M. Eves
BAKER REP.: R. Lewis
BORING NO.: 73-MW14
SHEET 1 OF 2

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TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: MCB Camp Lejeune, O. U. #9, Sites 65 and 73 Remedial Investigations
CTO NO.: 0312 BORING NO.: 73-MW14

SAMPLE TYPE
S = Split Spoon
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DEFINITIONS
SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
RQD = Rock Quality Designation (%)
PID (ppm) = Results recorded with Hnu or OVA in ppm

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	SPT or RQD	Lab Class. or Pen. Rate	PID (ppm)	Visual Description	Well Installation Detail	Elevation (ft. MSL)
11 11.0	S-4	85%			.7/.8	Continued from Sheet 1		
S5 11-13 12 13 13.0	S-5	2.0'/2.0 100%	1 1 1 3		1.3/1.5	SAND, fine grained w/trace silt. Gray and tan w/dark brown/black staining (petro odor), medium dense, wet	well screen	
S6 13-15 14 15 15.0	S-6	2.0'/2.0 100%	11 10 9 10		-		sand pack	
S7 15-17 16 17 17.0	S-7	2.0'/2.0 100%	2 2 2 6		.7/.7			
S8 17-19 18 19 19.0	S-8	2.0'/2.0 100%	18 11 8 10		.6/.7	SAND, fine grained w/ trace silt and trace clay and wood fragments		-8.2
						SAND, fine grained w/ trace silt. Gray, wet.		-8.7 -9.2
20						End of Boring	well cap	-10.2
21						TD = 19.0' (bgs)		
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29								
30								

DRILLING CO.: Parratt-Wolff BAKER REP.: R. Lewis
DRILLER: M. Eves BORING NO.: 73-MW14 SHEET 2 OF 2